EUMENES DYSCHERUS H. DE SAUSSURE, A NEOTROPICAL, NOT AN AFRICAN WASP, AND OTHER NOTES ON SYNONYMY (HYMENOPTERA).

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In his "Monograph of the Solitary Wasps," H. de Saussure describes, under the name "*Eumenes dyschera,*" an insect stated to have come from tropical Africa. The species has been generally ignored since. In my "Revision of the Vespidae of the Belgian Congo" (1918), I attempted to recognize it in a melanistic color phase of *E. campaniformis* (Fabricius), occasionally met with in the Belgian Congo. There were, however, several points in which the description disagreed with the Congo specimens.

Fortunately, de Saussure's type is still in existence at the British Museum, where some time ago I had occasion to study it. It bears no definite locality label, so that quite possibly the habitat was merely surmised as African on account of the superficial resemblance with *E. maxillosus* (de Geer). As a matter of fact the two species are structurally not in the least related. In the same collection I found, next to de Saussure's type, five females of Rio Grande do Sul, Brazil (R. von Ihering Coll.), which agree with it in every respect. A note in the late Meade Waldo's handwriting, pinned near the American specimens, reads: "I can see no difference in the specimens labelled Rio Grande do Sul from the African form. Possibly the specimens were imported on ship board. G. M. W. 25. V. 1909." Among the many hundreds of *Eumenes*, of all parts of Africa, which have passed through my hands, I have never seen anything approaching *E. dyscherus* and I am quite convinced that it is a truly American wasp and does not occur on the African continent.

Moreover, further research shows that *E. dyscherus* is really a widely distributed, Neotropical insect, which has been redescribed several times. H. de Saussure named it *E. chalicodomae* in 1875, while *E. magna* Brèthes (1903) and *E. centralis* P. Cameron (1906) are likewise the same species. I have examined the type of *E. centralis* at the British Museum and through the kindness of Mr. S. A. Rohwer, I was able to compare a specimen of *E. magna*, of Puerto Bertoni, Paraguay, determined by Brèthes and now at the U. S. National Museum.

Eumenes dyscherus H. de Saussure.

Eumenes dyschera H. de Saussure, Et. Fam. Vesp., I, 1852, p. 50 (♀) (locality given by error as tropical Africa).

Eumenes chalicodomae H. de Saussure, Synopsis of American Wasps, 1875, p. 108 (♀) (type locality: Pernambuco, Brazil).

Eumenes magna J. Brèthes, An. Mus. Nac. Buenos Aires, (3) II, 1903, p. 258 (♀) (Novo Friburgo and Jundiahy, Brazil; Chiquitos, Bolivia); (3) VI, 1906, p. 335. Zavattari, Zool. Jahrb. Abt. Syst., XXXI, 1, 1911, p. 53 (♀ ♂); Arch. f. Naturgesch., Abt. A, LXXVIII, Heft 4, 1912, p. 120.

Eumenes centralis P. Cameron, Zeitschr. Syst. Hym. Dipt., VI, 1906, p. 128 (♀) (Panama). J. Brèthes, Ann. Soc. Ent. France, LXXXVIII (1919), 1920, p. 394.

The chief morphological characters of the female are as follows: Head slightly longer than wide. Eyes about as far apart on the vertex as at the clypeus (rather closer together on the vertex). Vertex and temples well developed, the vertex posteriorly with a slight longitudinal impression and anteriorly with a transverse, curved groove above each of the posterior ocelli. Ocelli quite close together, separated by two elongate, low swellings; the posterior ocelli a little less than one and one-half times as far apart as from the inner orbits. Front strongly raised and carinate between the antennae; the upper part of the swelling with a deep, impressed line which continues to the anterior ocellus and bears a pit about midway. Clypeus much longer than broad; its lower, free portion about as long as the upper, interocular part; its anterior margin over one-half the total width; moderately, somewhat angularly, and rather narrowly emarginate, the edges being very broadly rounded and almost lobate; in each edge ends a longitudinal, low carina, which extends to near the middle of the clypeus. Thorax much longer than high in profile, distinctly depressed, the mesonotum but slightly convex. Pronotum straightly truncate and sharply rimmed anteriorly; at the humeral angles the rim is regularly rounded off downward and followed behind by a groove-like contraction when viewed from above. The parapsidal furrows are deep in the posterior third of the mesonotum. The epimeron of the mesopleura is conspicuously swollen in its upper part into a blunt tubercle; the lower half of the mesopleura bears anteriorly a deeply impressed line, behind

the epinemial depressions for the fore legs. Propodeum rounded off at the sides, divided by a longitudinal groove which is quite deep and broad, except immediately behind the postscutellum. First abdominal segment (petiole) a little shorter than the thorax; with a very narrow, stalk-like, basal third; the remainder fairly parallel-sided, from two to two and one-half times as long as wide; the passage between the two portions abrupt; the wider portion is somewhat flattened or longitudinally grooved behind and presents, shortly before the apex, a very deep pit; the apical margin is not appreciably swollen and forms no projecting edges, while the spiracles are not raised. The apical margin of the second segment is not duplicate, but the tergite bears, shortly before the apex, a slightly depressed, transverse, punctate line. The second sternite shows over most of its surface a longitudinal, quite low and blunt ridge, fading away before the apex, where it is more or less connected with similar, transverse, arcuate ridges or flattened swellings; these structures are much less apparent in certain specimens than in others.

The puncturation is quite peculiar, being of two kinds: on head and thorax one finds, first, rather large, but sparse punctures, which are coarser and denser on the pronotum and more remote on the mesonotum; the intervening spaces are quite densely covered with a minute puncturation. The clypeus is irregularly rugulose, somewhat longitudinally so on the lower half. The tegulae only bear the minute puncturation, which also covers most of the abdomen; in addition there are a few, scattered, somewhat larger punctures on the tergites, which are especially prominent and closer before the apex.

The antennal hook of the male has not been described.

The coloration is black and ferruginous; but, as noted by Brèthes and Zavattari, it varies a great deal. Sometimes the ferruginous color is restricted to spots on the front, pleura, and fore legs. Then we find all transitions to specimens which have the head and thorax quite extensively ferruginous; and that color may even extend over the sides of the first and second abdominal segments. The clypeus is ferruginous. Generally there is a narrow, ivory-white line at the apex of the first tergite; occasionally this may be absent. The wings are deep black, with strong violaceous reflections. In coloration *E. dyscherus* is the exact copy of the typical color phase of the African *E. maxillosus* (de Geer), which also varies considerably in the extent of ferruginous and black. Among South American wasps, the same type of liv-

ery is presented by certain color phases of *Zethus mexicanus* (Linnaeus).

The length varies considerably (total length 17 to 23 mm., according to Zavattari). H. de Saussure's type of *E. dyscherus* measured 20 mm. from front to apex of second tergite.

The species is evidently quite closely allied to *E. wagnerianus* H. de Saussure, of which I have before me four females collected by Mr. L. H. Viereck at Vista Nieve, San Lorenzo Mt., Colombia, December, 1922. The different shape of front and vertex, the absence of a tubercle on the epimeron of the mesopleura, and the shape of the second sternite, which not only lacks the peculiar ridges of *E. dyscherus,* but is visibly swollen before the base, sufficiently indicate that *E. wagnerianus* is specifically distinct.

The distribution of *E. dyscherus,* as known at present, includes Uruguay, Paraguay, Brazil (States of Rio Grande do Sul, Sao Paulo, Espiritu Santo, Minas Geraes, Rio de Janeiro, Piauhy, Pernambuco, Maranhao, and Pará), British Guiana, Bolivia, Eastern Peru (Chanchamayo), Venezuela, and Panama. Mr. Nathan Banks collected a female at Barro Colorado, Canal Zone, June 21, 1924.

Brèthes included *E. dyscherus* in the same subdivision of *Eumenes* with *E. canaliculatus* (Olivier), while Zavattari transferred it to the division *Alpha* of de Saussure, where de Saussure had placed the allied *E. wagnerianus.* It should be noted, however, that the division *Alpha* (H. de Saussure, Et. Fam. Vesp., III, 1856, p. 128) was first established for the " I^{ère} division " of *Eumenes* in de Saussure's Et. Fam. Vesp., I, 1852, p. 28, and thus corresponds to *Eumenes, sensu stricto* (type: *Vespa coarctata* Linnaeus). That group, to which belong also most of the North American species, has the hind margin of the second segment distinctly duplicate, a condition which is not present in either *E. wagnerianus* or *E. dyscherus.*

Both *wagnerianus* and *dyscherus* should in my opinion be included in H. de Saussure's division *Delta* (Et. Fam. Vesp., III, 1856, p. 130), which may well be given subgeneric rank, with *Sphex maxillosus* de Geer as the type. The shape of the abdominal petiole or first segment is so variable that it hardly is useful for a division of *Eumenes* into subgenera. That it is quite misleading is evident from the fact that de Saussure placed his *E. wagnerianus* in the division *Alpha,* and his *E. chalicodomae* (= *E. dyscherus*) in the division *Zeta,* although both are very closely related. *E. dyscherus,* on the other hand, he had originally de-

scribed in his "IIe division" or division *Delta.* In a forthcoming paper I shall indicate the natural groups of subgeneric value, which I believe may be recognized in the extensive genus *Eumenes.*

Eumenes campaniformis var. **pseudodyscherus,** new name.

Eumenes caffer var. *dyscherus* J. Bequaert, Bull. Amer. Mus. Nat. Hist., XXXIX, 1918, p. 74 (♂) (not *E. dyschera* H. de Saussure, 1852.)

It is necessary to propose the above new name for the melanistic color phase of *E. campaniformis,* which I had erroneously regarded as H. de Saussure's *E. dyschera.* It has only been found thus far in the Belgian Congo (Stanleyville and Walikale), and is of great interest because it mimics the typical color phase of *E. maxillosus,* as well as *E. lepeletieri* var. *hottentotus* H. de Saussure, both of which occur in the same region. It differs from them, however, in having the wings subhyaline with amber-yellow tinge, not purplish black.

As I shall show in a forthcoming paper on the South African *Eumenes, E. caffer* (Linnaeus) is morphologically quite distinct from *E. campaniformis* (Fabricius) and is, moreover, restricted to South Africa. The var. *pseudodyscherus* is structurally identical with *E. campaniformis,* of which it is one of several color phases found over the wide area inhabited by that species.

Eumenes dyschera G. K. Marshall, Trans. Ent. Soc. London, 1902, pp. 525, 570, and 572; Pl. XXI, figs. 16 (♂) and 17 (♀); Pl. XXII, fig. 14 (♂), of Rhodesia (Salisbury), is neither H. de Saussure's *E. dyschera* nor *E. campaniformis* var. *pseudodyscherus.* According to the figures it is *E. lepeletieri* var, *hottentotus* H. de Saussure.

Pachymenes andeus (Packard).

Montezumia andeus S. A. Packard, First Ann. Rept. Peabody Ac. Sci., 1869, p. 60 (♂) (Quito). Dalla Torre, Cat. Hym., IX, Vesp., 1894, p. 38 (wrongly credited to Smith); Gen. Insect., Vespidae, 1904, p. 27. Zavattari, Arch. f. Naturgesch., Abt. A, LXXVIII, Heft 4, 1912, p. 151. J. Bequaert, Rev. Zool. Afric., IX, 1921, p. 243.

Odynerus (*Hypodynerus*) *tapiensis* H. de Saussure, Rev. Mag. Zool., (2) XXII, 1870, p. 56 (♂) (Plateau of Tapia at the foot of Chimborazo); Synopsis of Amer. Wasps, 1875, p. 218 (♂). Schrottky, An. Soc. Cient.

Argentina, LV, 1903, p. 179. Zavattari, Boll. Mus. Zool. Anat. Comp. Torino, XXI, No. 529, 1906, p. 19 (♀ ♂).

Odynerus tapiensis Dalla Torre, Cat. Hym., IX, Vesp., 1894, p. 100. Brèthes, An. Mus. Nac. Buenos Aires, (3) II, 1903, p. 268, footnote.

Odynerus (*Leionotus*) *tapiensis* Dalla Torre, Gen. Insect., Vespidae, 1904, p. 55.

Nortonia tapiensis Zavattari, Arch. f. Naturgesch., Abt. A, LXXVIII, Heft 4, 1912, p. 167, Pl. II, fig. 48 (♀ ♂).

The collections of the Museum of Comparative Zoölogy, at Cambridge, contain the male holotype and two paratypes of Packard's species, which has not been recognized since the original description. It is unquestionably the same insect as H. de Saussure's *Odynerus tapiensis,* described a year later. H. de Saussure notes that its appearance is that of a *Montezumia,* but the maxillary palpi are distinctly six-jointed, while the labial palpi are four-jointed.

The male offers many striking peculiarities: the clypeus is very deeply emarginate at apical margin, with long and sharp, lateral spines; the mandibles are long and dagger-like, their inner margin nearly entire; the posterior ocelli are much farther apart than from the inner orbits; the antennae are long and thick, the several segments being swollen toward apex; the tenth and twelfth segments are deeply emarginate at apex on the under side; the thirteenth (or hook) is very long and wide, narrowed at the base, then suddenly widened and curved, more or less spoon-like, ending in a blunt point; lateral ridges of propodeum very prominent and carinate, continuing below into the much lower, inferior ridges; the superior ridges not marked, the dorsal areas gradually passing into the concavity; middle femora conspicuously widened along the lower margin, with a deep, arcuate emargination before the base, excavated and with an oblique carina on the anterior face; first abdominal segment short campanulate, distinctly narrower than the second, but the sides gently rounded off and gradually tapering to the base; the first tergite somewhat flattened posteriorly and with a short, longitudinal groove before the apex; second tergite broad and flattened; second sternite raised anteriorly into a median, rounded tubercle, which drops abruptly toward the base of the segment; head and thorax coarsely and uniformly, rugosely punctured and densely covered with long, black, erect hair; clypeus finely alutaceous, without punctures, completely covered with silvery-white pile

(in well-preserved specimens); abdomen nearly impunctate and somewhat shiny, the sternites and the first tergite with long, black hairs which are, however, much sparser than on the thorax; the remaining tergites bare; legs bare; all the tarsi and the hind tibiae densely covered with short, silky pile. The insect is black, including the clypeus; the apical half of the femora, the tibiae and the two basal joints of the tarsi are bright ferruginous-red; wings purplish-black. Length (h. + th. + t. 1 + 2): 14 mm. to 17 mm.

The female differs but little from the male, except in the sexual characters, such as the structure of antennae; the middle femora are normal; the clypeus is entirely black and somewhat longer than in the male; its apical emargination much less deep, the lateral edges forming sharp, but rather short teeth. The color is the same, except that the legs are more extensively ferruginous-red, the entire tarsi being of that color. Length (h. + th.+ t. 1 + 2): 17 mm. to 18 mm.

One of Packard's two paratypes was a female deprived of the head, and probably on that account not recognized as such.

As pointed out by Zavattari, the species is peculiar to the Andean region of Ecuador and Peru, between 9,000 and 10,000 ft. I have both sexes from Cuzco, Peru.

This wasp has been placed in *Nortonia* by Zavattari, but, owing to the absence of a transverse carina on the first tergite, I believe that it properly belongs in *Pachymenes*. I have formerly called attention to the fact that the genotype of *Nortonia, Odynerus intermedius* H. de Saussure, possesses a transverse carina on the first tergite, as in *Ancistrocerus*; while the genotype of *Pachymenes, Pachymenes sericeus* H. de Saussure, lacks this crest (see Bull. Amer. Mus. Nat. Hist., XXXIX, 1918, pp. 90–94).